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dwindling away every day, is indeed very discouraging : whereas, on the contrary, I do not balance one moment to declare it, as my first persuasion, that we can spare 100,000 brisk young fellows, and still be the most populous flourishing nation in Europe.

I am,

Reverend Sir,

Your affectionate Brother,

and very humble Servant,

Richard Forster.

LVIII. *A Letter to the Right Honourable the Earl of Macclesfield, President of the Royal Society, from the Rev. William Brakenridge, D.D. F.R.S. containing an Answer to the Account of the Numbers and Increase of the People of England, by the Rev. Mr. Forster.*

My Lord,

Read Mar. 16,  
1758.

**A**S I endeavoured, at a former meeting of the Society, to answer extempore some objections offered by a Gentleman in the country, to what I have wrote concerning the number of people in England ; I now presume to send you what I said then in writing, with some farther reflections. And this subject I never intended to

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have meddled with any more; but as I seem to be called upon, to defend what I have formerly wrote, I hope I shall be excused if I briefly attempt it. Your Lordship, I know, and our illustrious Body only desire a fair representation of facts, which is the ground of all philosophical inquiries; and therefore I shall endeavour to do this, as far as I can, without regarding any hypothesis.

My design, when I first entered on this subject, was to discover whether our people were in an increasing or decreasing state, with regard to their numbers; which I thought of great importance to be known, because of its influence on the affairs of Government, in determining our strength, in settling of taxes, and directing us in the œconomy and imployment of our people. Now, in order to proceed in this inquiry, it was evident to me, that if the number of houses were exactly known, the number of people would be nearly ascertained. And therefore I attended to this, to find out the number of houses, as the only thing that could with any certainty help us to judge of this matter. And accordingly, being resolved to depend only upon the most sure, and general observations, I applied to a public office, where I thought I might possibly get at their number. And I there found, that from the last survey that was made, since the year 1750, there were 690,700 houses in England and Wales that paid the window-tax, and the two-shilling duty on houses; besides cottages that paid nothing. By cottages are understood those who neither pay to church or poor, and are, by act of parliament in 1747, in consideration of the poverty of the people, declared to be exempted both from the  
tax

tax and the two-shillings duty ; and they only remain not accurately known, to ascertain the whole number of houses. However, they are so far known, that from all the accounts that are hitherto given in, they do not appear to be so many as 300,000 ; and from what I myself have seen, in the books of that office, I should think they were not much above 200,000 ; for in some places, that I was perfectly acquainted with, I found many of the day labourers rated to the two-shillings duty, and there did not appear to be one house in ten omitted. And therefore, if there are not 300,000 cottages, as seems plain to me, there cannot be a million of houses in the whole in England and Wales ; and the rated houses are to the cottages more than two to one ; of both which, according to the returns made, there is now about one in seventeen or 58,800 empty throughout the kingdom. But if we were to allow, that there are a million of houses in the whole ; which is more than the Gentlemen in the above mentioned office believe, and then deduct those that are empty, there could not be above 941,200 inhabited houses ; and consequently supposing six to a house, about 5,647,200 people, or near about five millions and an half ; which at the utmost, is what I insist on to be the real number.

But now the Gentleman, who objects to my calculations, thinks, that I have made the number of houses too few, and that in the whole there are above 1,400,000 houses, of which he imagines there are more than 700,000 cottages ; for he supposes them to be more than the rated houses ; and from thence he infers, that there are about seven millions and an half of people, in England and Wales ; which I wish, with all

my heart, was the true number : But I am so far from thinking that I have under-rated them, that I suspect I have rather made them more than they are. However, this controversy will soon be determined, there being now orders given, as I am informed, to all the Officers concerned in the window-tax, to make an exact return of all the cottages, as well as the rated houses, in each of their several districts. In the mean time, the Gentleman and I differ in this, that he supposes above 400,000 cottages more than I can possibly imagine.

Let us now see upon what grounds, and by what method of reasoning he determines his numbers. He makes a division of the 690,000 taxed houses into three classes, placing 200,000 of them in the open country and villages, and 200,000 in the market and inferior towns, and the next, *viz.* 290,000, in the cities and great towns ; for which division he has nothing to direct him ; no proof, nor even probability. And as it is a mere arbitrary supposition, all reasoning and calculations founded upon it are nothing to the purpose, and the number of houses or people computed from thence must be false or uncertain. But yet, upon this supposition, as if it was absolutely certain, he goes on to compute the houses and people in each division.

As to the first, he says he has counted all the houses in nine contiguous parishes in Berkshire, in which he has found the whole number to be 588, and those charged to the duty to be only 177 ; and therefore the cottages are to the rated houses as 411 to 177, or above two to one. And from this he assumes, that the whole number of houses thro' the villages and open country in England will  
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be to the cottages nearly in the same proportion. But here I am surpris'd, that he should reason in so loose and an inaccurate a manner. For, as there may be 7000 parishes in the villages and open country, to infer from the numbers in nine of them that are contiguous, and that all of them together do not make a very large parish, many being much larger as to the number of houses, and where there may be particular circumstances; I say, to infer from them what the proportion will be in all parishes, in the villages and open country, is the same way of reasoning as to say, because the poor in one parish are in such a proportion, therefore they are so in 1000 parishes, or thro' four or five counties: whereas it is plain, that the proportion differs almost in every parish, and in every county; and the sum of all must be added together, before we can know what the real proportion is. And nothing can be inferred from the circumstances of a few parishes, or even of a County, what the proportion will be in the whole. And yet, from such precarious and vague reasoning he presumes to compute, that there are above 460,000 cottages in the villages and open country; having assumed, without any hesitation, that there are 200,000 rated houses in that extent. Such reasoning is unusual in philosophical inquiries.

In like manner the Gentleman reasons very inaccurately about his second division, containing the lesser market and country towns, having supposed in them 200,000 taxed houses: For from one instance of the market town of Langborne, having found the whole number of houses to be to the cottages as 445 to 229, or the rated houses to the cottages as 216 to 229, he supposes the like proportion in all the market

ket towns. That is, tho' there be perhaps above 300 market towns in England, he supposes each of them has the same proportion of the poor in it as the single town of Langborne; which is unreasonable to imagine. For every one of them may have a different proportion, according to the various circumstances of their trade and situation. But yet from this strange and uncertain way of reasoning, without any induction, and from one instance among 300 cases at least, he concludes by proportion, that there are 388,646 houses in the country market towns, of which there are 188,646 cottages, besides those in the cities and great towns.

In the next place, as to his third class, the cities and great towns, he allows, that my proportion may be among them, *viz.* that the rated houses are to the cottages as 690,000 to 200,000, or 69 to 20: For he thinks, that it cannot be any-where but in the most flourishing places. And therefore, as he has arbitrarily placed 260,000 taxed houses in them, he computes that they must contain 84,058 cottages. But he has given no proof, that my proportion is only in the most flourishing places, besides these few instances that he has produced; which are nothing to form any general conclusion upon. For if we were to be directed by a few cases, we might think that there were much fewer cottages than I have allowed. There are some parishes, in which there are none at all. In the great parishes of St. James's and St George's Westminster, in which there are about 7000 houses, there are none: in the country parish of Chiselmere in Kent, where there are above 100 houses, there are but three: and in many parishes there is not one in 20. So that from particular instances, there is nothing

to be concluded. But in all Middlesex, London, Westminster, and Southwark included, in which the poor are as numerous as in most places in the kingdom, because of the numbers of labouring people that flock hither for employment, there is nearly the same proportion that I have assigned. For from a late survey in that district, as I am informed, there are 87,614 houses in the whole, and of these 19,324 cottages, and 4810 empty. Which indeed shews, that we are not so populous, in and near the metropolis, as is commonly supposed, and much less than I had calculated in my first letter : For from this account, if it be true, there are not above 530,000 people in that compass ; of which, within the bills of mortality, there die about 25,000 yearly ; that is, not less than one in 20.

As to what the Gentleman mentions concerning the militia, he seems to be much mistaken. For if the proportion be as he says, that one in 45 is levied, this directly proves the number of people in England and Wales to be about five millions and an half, according to my calculation ; because the electors or balloters are the fencible men, or those able to carry arms. And if the whole levy be 32,000, then 45 multiplied by 32,000 will give 1,440,000 for all the fencible men in England. But Dr. Halley has clearly shewn, that the fencible men are one quarter of the whole people, children included ; and therefore, four times 1,440,000, or 5,760,000, will be the whole number of the people ; which is nearly what I have made them.

And thus, having seen how he has established his numbers in opposition to me, let us now, in the next place,



place, consider what he has said with regard to the increase of our people. He says, whether the kingdom is really in a declining or increasing state, is a problem not to be solved by calculation : And yet he himself can guess by appearances, that it has greatly increased within these 40 years. But, by his good leave I must tell him, that it is a problem in political arithmetic to be solved from some *data*, as well as others. If the number of people be nearly found, and the general proportion of births to burials, at an average, thro' the kingdom be known, with the annual losses of our fencible men, at a moderate computation ; from these *data*, I say, any one, who understands numbers, will easily determine whether we are increasing or decreasing. And accordingly, I have shewn, that the annual increment of our fencible men is not much above 8000, which number is consumed by our annual losses ; and therefore we are not in an increasing state. For the whole number of people must always be in proportion to the fencible men ; so that, if there is no increase of them, there can be none upon the whole.

It is true, I am the first who ventured upon a solution of this question ; but when I consider what I have done, I cannot see but that the principles upon which I reasoned are right. The *data* are, I think, exact enough to discover our state. And Dr. Halley's rule to compute the fencible men, where our losses are to be reckoned, is undoubtedly true. So that if there is any difficulty, it is in fixing the general proportion between births and burials, thro' the kingdom, *viz.* 112 to 100 ; which I have taken from Dr. Derham, who had collected many observations ; being  
a greater

a greater proportion than Sir William Petty allowed. And which if it is thought too small, it is to be considered, that within the bills of mortality the births are much under the burials as 4 to 5; and in some of the great towns there are fewer births than burials, and in others they are nearly equal; so that these reduce the proportion that arises from the villages and open country.

But if we were to make a calculation from the births and burials, only in the villages and open country; which Dr. Derham has found to be at an average as 117 to 100, or nearly as 7 to 6; and suppose this to obtain all over Britain and Ireland, in the towns as well as the country, which is surely more than the truth; we shall then find, that the annual increment cannot be more than 9000 fencible men; which corroborates my former estimate. For, to compute it by the principles I have formerly endeavoured to establish; let the number of our people in Britain and Ireland be eight millions and an half, that is, five and an half in England and three millions in Scotland and Ireland; because some Irish Gentlemen have assured me, from some facts, that there is half a million more in their country than I formerly allowed; for I did not pretend to calculate them; and then the annual number of the dead, in Britain and Ireland, being one in 40; will be about 212,500; which will be to the births as, 100 to 117: And therefore the births must be 248,625, and the increase 36,125; of which the fourth part is about 9000 for the fencible men, which I am persuaded is more than the real number.

Now let any one compute our losses in the moderate way that I have done, and he will easily see, that

they cannot be less than this number; and consequently we are far from increasing. And indeed it is evident from the number of empty houses thro' the kingdom, mentioned above, *viz.* one in seventeen, or 58,000, and one in twelve of those that are taxed within the bills of mortality. For it is impossible, if we were increasing, that there could be so many empty; And therefore the appearance of so much building is only the effect of our luxury, requiring larger, more convenient, and more elegant houses, and not caused by our increase.

However, the Gentleman objects to all this, and says, that he has examined the Registers of some neighbouring parishes, and particularly of three that are perfect; and he finds, that the burials are to the baptisms as 83 to 149; which may possibly be the case, as I myself have known it in one parish in the Isle of Wight, where the place is healthy, and people generally marry. But does he imagine that this proportion is general all over England? If so, we should increase in a rapid manner indeed! for then we should double our people in 35 years, if it were not for our losses; which no reasonable man will venture to say. He does not reflect, that in many country places, from their bad situation, there is very little increase, and in some towns none at all, and in others a decrease, continually supplied from the neighbouring country. Within the bills of mortality there are annually 5000 burials more than the births; and consequently, to maintain our numbers here, there must be a yearly supply of 5000; which destroys the whole increase of six or seven counties. And Dr. Derham found, from the accounts he had of country parishes, that

that in general among them the proportion of births to burials was not greater than 117 to 100, as we mentioned above; so that nothing can be concluded from particular healthy places. The question is, what is the result upon the whole thro' the kingdom? what is the general proportion of the births to burials, from which the increase is to be estimated? and which Sir William Petty says is 111 to 100, and Dr. Derham as 112 to 100. See if he can disprove these numbers by putting together all the different accounts from every corner, among the towns as well as the country; and if he cannot, to argue only from a few instances is nothing to the purpose; for where there is a multitude of different cases, they must all be considered, to arrive at the general truth. But even in the particulars he mentions, he has not completed his argument; for, to make it conclusive, he should have shewn, that, within these last forty years, the time, he thinks, of our great increase, in those parishes the number of houses or people were increased, in proportion almost as the births were above the burials, as 149 to 83: and if that cannot be made to appear, it is plain, that, for all he has said, the annual increase may be constantly consumed by our losses.

And now the worthy Gentleman having endeavoured to shew, from the case of a few parishes in the country, that we are in an increasing state, he proceeds to give me his serious advice in two particulars:

*First*, That I would reconsider a proposition advanced by me, That all reasonable ways of increasing our people, even to the naturalizing of foreigners,

would be for the public welfare. In answer to which kind admonition I must say, that I have often considered the thing, as far as I can ; and I think this may be easily shewn against any political writer, That it is the interest of a government, when they have powerful and dangerous neighbours, to increase their people by all reasonable means, even to the inviting of foreigners, so far as the natural produce of the country can sustain them ; and that it is the fault or weakness of an administration not to be able to employ them. And in Britain, where they can have the assistance of the produce of so many large and fruitful countries of their own in America, I will venture to say, that it is an error in their policy, not to endeavour to increase their people ; by which they might be more formidable, and perhaps stronger than their grand Enemy. The present King of Prussia has shewn the utility of this within his dominions ; by which he has been enabled to make such a figure in Europe.

The *second* thing he admonishes me to reconsider is, That I have supposed our commerce to be one cause of the loss of our fencible men. And who in the world doubts of it, but himself ! Do shipwrecks, the disasters and inclemency of the sea, the scurvy, &c. beget people ? But he will say, without these we could not have trade, which employs great numbers of our people ; and therefore, what we lose, we may gain another way. And just so he may say of our wars, that occasion the destruction of so many of our people, that they are no loss to us ; for we gain by them in their consequences, in securing of our liberties and property, and by which  
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our trade is preserved and promoted. But notwithstanding this, can it be said, that war does not diminish our fencible men ! The truth is, trade increases riches, and gives more of the conveniencies of life, and brings luxury along with it ; but it does not necessarily breed people : For we see in those countries where they have little trade, the people increase much faster than they do with us, as appears from the Bills of mortality in Prussia ; where the general proportion of the births to the burials is greater than it is here, *viz.* 4 to 3 ; and by which the people might double in 84 years, if it were not for their losses. (*Vid. Phil. Transf. vol. xxxvi.*) Which great increase, by the way, easily accounts for those vast swarms of people that came from thence and the adjacent countries in former ages, and over run all Europe. And therefore it is not so terrible a paradox, as he imagines, that possibly where there is much less trade the people may increase faster ; for luxury and other vices, that come with trade, do not promote an increase.

And now, as he has been so good as to give me his advice, I will return the favour, and desire him to reconsider the method of reasoning by induction ; which may possibly help him to escape some paradoxisms, in arguing upon these subjects. And I would likewise recommend it to him to inquire diligently, whether the number of our houses in England be increased these last sixty years ; which, according to his reasoning, ought at least to be doubled : For if there is no increase of the houses, there can be none of the people.

To conclude : He adds, that my doctrine, from  
beginning

beginning to end, to say the best of it, is ill-timed, when we are contending with our hereditary enemy, *pro aris & focis*. But here his zeal hurries him on, that he does not look to the dates of my Letters. For the first three were read before the Society, and ordered to be printed, long before the war was proclaimed; and as for the last, it is only a supplement to the rest; in which I have shewn, that France, by the bad œconomy of her people, is not in an increasing state; which, I think, is a comfortable hearing. But supposing they had been all printed during the war: What then? Is a fact to be concealed that, if discovered, may be useful to prevent errors in government, and rectify our notions of the œconomy of our people? What advantage can our enemies make of such a discovery? Will it encourage them to imagine that we shall be easier subdued, when they know, by the most moderate computation, we have at least two millions of fencible men in our British islands. Enough, surely, to resist them in all their attempts! But I doubt we are not so deficient in our numbers as in public virtue, without which the greatest multitude may be easily overcome.

And thus, my Lord, I have endeavoured to answer what this Gentleman has wrote in his second Letter; for I pass over the first, as it does not seem to contain any more in opposition to me, than what I have here considered. And upon the whole I cannot see, that he has said any thing to invalidate what I have formerly advanced. If I could discover it, I should be very ready to acknowledge my error.

I am sensible I have made this reply too long ; but I trust your usual benevolence to all our worthy Members will excuse me, who shall always esteem it an honour to be,

My Lord,

Your Lordship's

Sion-College,  
March 16. 1758.

Most obedient

and faithful Servant,

Wm. Brakenridge.

END of PART I. VOL. L.